

Distributed Downhole Drilling Network

Abstract

A high-speed downhole network providing real-time data from downhole components of a drilling strings includes a bottom-hole node interfacing to a bottom-hole assembly located proximate the bottom end of a drill string. A top-hole node is connected proximate the top end of the drill string. One or several intermediate nodes are located along the drill string between the bottom-hole node and the top-hole node. The intermediate nodes are configured to receive and transmit data packets transmitted between the bottom-hole node and the top-hole node. A communications link, integrated into the drill string, is used to operably connect the bottom-hole node, the intermediate nodes, and the top-hole node. In selected embodiments, a personal or other computer may be connected to the top-hole node, to analyze data received from the intermediate and bottom-hole nodes.